MONOTYPE

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Technical Bulletin

OCTOBER, 1958

The Triplex Mould for accented Arabic Text

DON'T READ THIS UNTIL you are certain that the working and object of the Duplex mould are perfectly clear in your mind. If necessary, turn back to our Article on the subject in the Bulletin of January last, as you cannot afford to be hazy about the duties of N+ .0075″ air nor how this combination has been brought into existence. All that we then said about "Duplex" is applicable in principle to "Triplex", which has developed from the same idea to serve a kindred but extended purpose.

That is to say, we are concerned with not *two* conditions (a normal-size exotic character, and an exceptionally tall one on account, perhaps, of an over-riding accent), but *three*—both of the above and also an exceptionally deep character which may include an underlying accent. Occasions may arise, too, when a character straggles off in both directions at once.

For this purpose, we have a mould which has a main blade and *two auxiliary blades*, representing the needs of the upward and downward extensions of the characters respectively.

The blade for the upward extension may be considered as identical with the auxiliary blade of the Duplex mould, in operation as well as in purpose, so we may confine our attention to the second auxiliary blade.

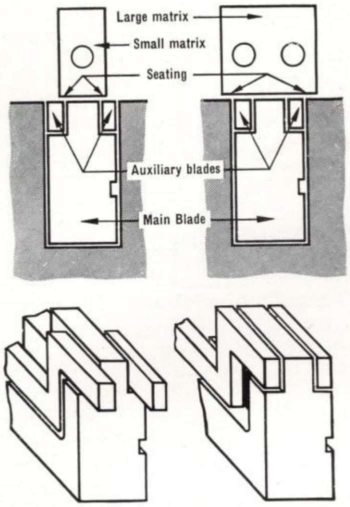
Like the first, it is accommodated in a recess machined in the side of the main blade, but it is, of course, the opposite side. Normally, it covers part of the top of the mould aperture, so as to reduce it pointwise, and complete the seating for a .2″ × .2″ matrix; from this position, it is withdrawn by a horizontal lever pivoted in the body of the mould, at a specific moment in the machine's cycle of operations after it has been signalled. Whereas the signal for the first auxiliary blade is the combination of the N and .0075″ perforations, the signal for the second is the N and .0005″ combination, and it is transmitted simultaneously with the signal for the character concerned.

A second valve box, similar to that for the Duplex mould operation (see illustration) is used. N air is again employed to raise the valve 92E7 against the pressure of the spring 92E8. When the valve is down, .0005″ air, admitted at one side, passes out at the other to perform its normal duty at the D pin block.

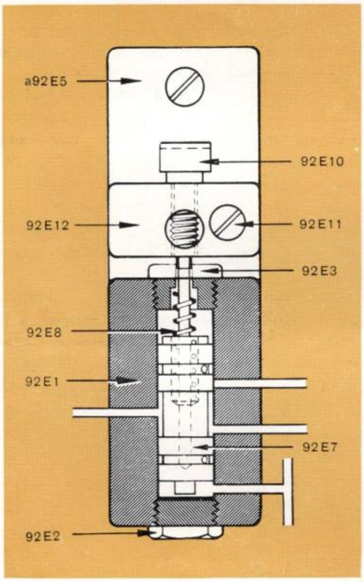
When the valve is raised, .0005″ air is directed to a second outlet, from which it is piped to a switch box comparable with the one in the Duplex mould system. The actual switch is again a spring-loaded double-ended piston with a pin engaging its recessed waist. The pin is fixed to a diamond-shaped swinging switch plate which is consequently carried forward by signal-air pressure, and returned—when this is cut off—by the spring.

Whereas, in the Duplex mechanism, the diamond switch plate diverts the selecting lever attached to the actuating lever (and therefore raised and lowered by the centring pin lever) to give mechanical action to the first auxiliary mould blade, in the case of the Triplex system, the second switch plate controls an additional pneumatic system. Furthermore, as the lateral deflection of the selecting lever is devoted to moving the first auxiliary mould blade, some fresh provision is necessary to give independent action to the second.

A short vertical lever, free to swing backwards and forwards, is therefore mounted on the side of the actuating lever, and it is this small lever which is positioned by the switch plate.

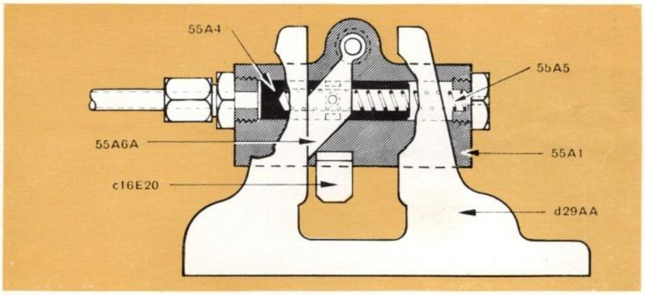


Diagrams illustrating the functions of the two Auxiliary Blades of the Triplex Mould. On the left, these Blades project to provide a seating for a .2″ × .2″ Matrix; on the right, they are retracted to give a maximum-width orifice for casting a character that has both top and bottom accents—the equivalent of exceptionally long ascenders and descenders.



Sectional View of a Valve Box;
there is one for each Auxiliary Blade

92E1	*Valve Box Body*
92E2	*Bottom Plug (solid)*
92E3	*Top Plug with clearance hole for venting*
a92E5	*Holding Plate*
92E7	*Valve*
92E8	*Valve Spring*
92E10	*Screw with extension forming Valve Lock*
92E11	*Clamp Screw, locking Screw* 92E10
92E12	*Housing for Screw* 92E10



Details of a Selecting Lever Switch Box

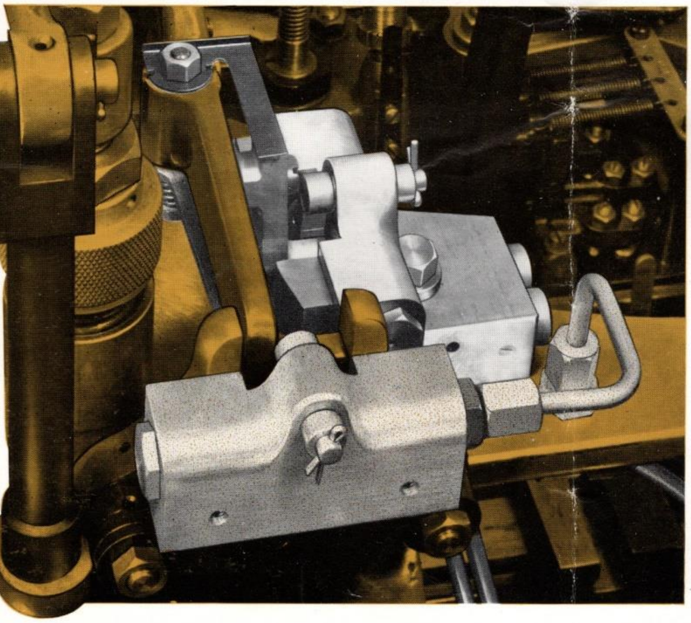
d29AA	*Fulcrum Bracket (for Duplex Mould)*
55A1	*Body of Switch Box*
55A4	*Piston*
55A5	*Piston Spring*
55A6A	*Diamond-shaped Switch Plate*
c16E20	*Selecting Lever*

According to the setting of the latter, the bottom of the short lever is caused to depress the end of one or other of two valve stems. As the heads of these valves are in a small chamber connected to the constant-air supply, a gust of this is admitted to one or other of two associated pipes.

These lead respectively to two opposed air cylinders furnished with a double-ended piston. Its recessed waist can thus give longitudinal motion to a pin mounted in a thrust bar which, connecting with the second horizontal lever of the mould, causes the second auxiliary blade to be opened when N+.0005″ air has given the signal and put in train the somewhat lengthy—but fully effective—sequence of actions that we have traced.

Return of the switch plate causes the next descent of the selecting lever to open the other valve, so that the double-ended piston is blown back, restoring the blade to normal.

To summarise:—N air raises a valve to divert .0005″ air to operate a switch-plate. This controls the admission of constant air to an operating cylinder, the piston of which is linked to the second auxiliary blade in a Triplex mould.



The mechanism controlling the second Auxiliary Blade, speciality of the Triplex Mould (clear area), is shown in its relationship to that controlling the first Auxiliary Blade, as used in the Duplex Mould (tinted area).